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Prepaid Financing of Primary Health Care in Guinea-Bissau

An Assessment of 18 Village Health Posts

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and
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Flat-fee prepayment may be the only feasible cost recovery scheme for primary health care in rural villages of Guinea-Bissau. The level of satisfaction was high in this simple prepayment scheme for drugs and limited primary health care in 18 villages. In a larger health system or an urban area, it might be more difficult to administer such a scheme and to prevent abuse of the system.

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With population growth increasing and budgets declining, the need for cost recovery in health care has grown. Eklund and Stavem report on a prepayment scheme for drugs and limited primary health care at 18 village health posts (USBs) in Guinea-Bissau.

At these health posts, adverse selection was reduced because enrollment in each village was almost universal. The villagers provided construction materials and labor — and indicated their willingness to pay more if drugs were available on a timely basis. (Drugs are heavily subsidized, and supplies rapidly depleted.)

Despite rapid depletion of drug stocks, the level of satisfaction was high. Villagers' willingness to prepay was often linked to better service, with drugs more readily available and midwives better trained.

Still, the quality of service at village health posts can only be as good as the support they get from the rest of the health care system. Authorities must strengthen health center support services and improve the drug resupply system. Workers at each post could also use bicycles — which might be offered through an incentive or credit scheme.

Flat-fee prepayment may be the only feasible cost-recovery scheme at the village level. In a larger health system or in an urban area, it might be more difficult to administer such a scheme and to prevent adverse selection and overuse of services.

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Acknowledgements

The survey of 18 health posts was set up and executed in cooperation with officials of the Ministry of Public Health (MINSAP) over a period of three weeks in June-July 1989.

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Abbreviations

MINSAP	Ministry of Public Health
PG	Guinea-Bissau Peso
USB	Health Post (Unidades de Saude de Base)
VHW	Village health worker
WHO	World Health Organization

Chapter I

Introduction

1.01 The following are the findings from a study of a prepayment scheme for drugs and limited primary health care at village health posts (USBs) in Guinea-Bissau. The goals of the study were to assess how the scheme functions, its benefits and its contribution to health finance in Guinea-Bissau.

1.02 One of the most important issues for African governments is how to finance the expansion of health care and improvement in the quality of services. The inadequacies of current public health care systems, combined with rapid population growth, have highlighted the need for additional resources to satisfy basic health needs. But in an era when economic growth rates are either low or negative, and when government budgets are no longer expanding and allocations to the health sector may be shrinking in real terms, merely maintaining the existing level of services out of existing revenue sources--let alone increasing them--is virtually impossible. Against this background, authorities must find ways to improve the use of available resources and mobilize additional resources. As a result, there is increasing interest in the concept of cost recovery.

1.03 One form of cost recovery is a prepayment scheme, in which healthy participants pay a premium in advance, for which they receive free or reduced cost health care in the event they fall ill. By pooling risks, such schemes prevent the financial catastrophe that may result from illness or injury. Moreover, they are an equitable way to pay for care since the cost of treating illness is spread evenly over both the sick and healthy. Further, prepayment plans (as opposed to fee-for-service) permit funding of community health education on subjects such as family planning and nutrition, as well as of

curative care. Finally, these plans are interesting in that, in principle, they could be designed to introduce a degree of progressivity, so those with higher incomes could bear a greater share of the cost.

1.04 These advantages must be weighed against several potential drawbacks. First, prepayment plans may raise the bill for medical care, because they are costly to administer. In the same vein, there is the related problem that actuarial principles need to be applied to set appropriate prepayment levels, so the scheme can be financially sound. However, because the information needed to do this is lacking in many African countries, rates would have to be set without adequate data, introducing substantial risk on the part of the insurer.

1.05 Second, the management of such schemes usually requires a minimum, and in some cases, sophisticated level of administrative skills which are often in short supply in low-income countries. (It should be noted that the handling of user fees--particularly exemption programs designed to help the poor--requires a certain level of administrative skills, as well).

1.06 Third, prepayment schemes may elicit two additional problems, adverse selection and "moral hazard." Adverse selection occurs when more patients with greater health problems (or those at greater risk) selectively enroll. Moral hazard occurs when patients who have prepaid use more services than they need because there are few ways to penalize what could be considered "overuse." However, one way to avoid the latter problems is for health providers to require deductibles or minimal co-payments from insured patients for the use of services.

1.07 Finally, although prepayment plans can effectively pool the risk of high medical costs across healthy and sick individuals, they do not necessarily improve the availability of health care to the very poorest people. The most destitute in society can not afford user fees; neither are they likely to be able to afford prepayments or insurance premia.

1.08 Recently, community-level insurance schemes controlled by local authorities and financed/administered either by villages or rural health care providers have begun to attract attention. First, these programs have the potential to reduce adverse selection, since it is possible to obtain universal enrollment (in each village). Second, their revenues might be more easily shielded from ministries of finance and centrally placed authorities who have been known to use these funds for other governmental programs. Until now, few data were available on the operation and performance of such community-based prepayment schemes in Sub-Saharan Africa. It is hoped that the experience of prepaid financing of primary health care and the dispensing of drugs in Guinea-Bissau described here will provide some lessons and guidelines that can be applied elsewhere.

Chapter II

An Overview of the Country and the Health Care System

The Country and the Economy

2.01 Guinea-Bissau is a small country on the west coast of Africa with an area of 36,125 square kilometers and a population estimated at 950,000. Eighty percent of the population is rural, located in villages of between 100-1,000 inhabitants, with an average size of 300. Roughly one-third of the land area is swamp or waterway, making many villages difficult to reach. The 1979 census recorded 33 ethnic groups (the largest being the Balantas, Fulas, Mandingas and Mandjacos).

2.02 The country is divided into eight regions (Biombio, Cacheu, Oio, Bafata, Gabu, Tombali, Quinara and Bolama), districts and villages. The most decentralized political and administrative structure is the village committee, which consists of five members--generally three men and two women--elected by the villagers. It functions as an intermediary between the central government and the villagers. Important issues are discussed in village-wide meetings, called "general assemblies."

2.03 Economic activities in Guinea-Bissau are largely subsistence based. Favorable natural resources include rich coastal waters, uncultivated arable land, dense forests and mineral deposits. Yet, with an estimated 1988 per capita income of about US$160, the country is among the poorest in the world. The large rural sector produces primarily for self-consumption. Agriculture, fisheries

and forestry account for about 90 percent of employment and an estimated 50 percent of GDP. Marketed output is largely confined to export crops, primarily cashews, groundnuts and palm kernels. Rice is the main food crop. In the 1950s, Guinea-Bissau was a net exporter of rice (around 40,000 tons a year), but since 1962, the country has relied on imports to supplement domestic production.

2.04 Guinea-Bissau is entering the second phase of a structural adjustment program. Economic growth has improved in recent years, with an annual growth rate of over 4 percent since 1984 (except for 1986). The government expects that growth will continue at 4-5 percent a year in real terms and that inflation rates will drop. Production, especially in agriculture, is expected to increase as a result of improved incentives, but performance is constrained by very limited transport infrastructure, credit and extension services. Between May 1987 and the end of 1988, the Guinea-Bissau peso (P.G.) was devalued by over 400 percent. A reliable price index for inflation is unavailable, but food prices are estimated to have risen by 120 percent in 1986, 110 percent in 1987 and 80 percent in 1988.

2.05 Demographic and social indicators place the country among the world's poorest: Life expectancy at birth is only 39 years,compared to 42 and 48 in neighboring Guinea and Senegal, respectively. Infant mortality is estimated at between 180-200 per 1,000 live births and almost one third of all children die before the age of five (see Table 1). Studies conducted between 1982-1984 found that 16-35 percent of the children surveyed were malnourished. The most common health problems are malaria, diarrhea, upper respiratory infections, measles, tuberculosis, neonatal tetanus and malnutrition.

The Health System

2.06 Health care services are offered at national, regional and district hospitals, at health centers (clinics) and at community-managed village health posts (USBs) (see Table 2). Private hospital care is not available. The country receives substantial aid from foreign governments as well as from non-governmental organizations (NGOs), which support the government-managed health care institutions.

2.07 Tertiary health care is provided in two national and four regional hospitals. Basic health services are provided in district hospitals and health centers. The 12 district hospitals have catchment populations of 20,000-50,000. The 121 health centers treat outpatients only and have catchment populations of 5,000-12,000. Oio, Bafata and Biombo are the most disadvantaged regions.

2.08 There are 450 village health posts (USBs), which form the base of the health care structure. Their creation reflects the goals of the 1976 National Health Plan, which emphasized the decentralization of services, preventive care (without neglecting curative services), the use of simple techniques and practices and education for health personnel, including village health workers (VHWs) and village midwives who form a volunteer staff. Although they receive assistance from the Ministry of Health in the form of construction materials, an initial stock of drugs, supervision and training, the USBs are entirely locally-managed and staffed.

2.09 USBs administer simple treatments and basic drugs. They are located

in standard two-room structures constructed of local materials (generally dried mud on a frame of branches or mud bricks), with one room for "general receiving" and a second for prenatal care. The inventory of drugs at the USB is restricted to 12 essential items and bandage materials. The six most common conditions/diseases treated at USBs are malaria, diarrhea, conjunctivitis, cough, pain and wounds (see Table 3).

Table 3: Consultations at USBs by type of illness (1988)

	Tombali region	Pitche sector*	Sum	Percent
Malaria	10843	12072	22915	27
Conjunctiv.	6076	4995	11071	13
Diarrhea	5323	2429	7752	9
Cough	5429	3609	9038	11
Wounds	7429	3002	10431	12
Pain	10246	9731	19977	23
Other	2164	1707	3871	5
Total			85055	100

*In Gabu region

Source: Service statistics

2.10 The USB is normally staffed by at least one VHW and one midwife, if not more, selected by the village political committee. Midwives, who are drawn from among the traditional birth attendants, provide prenatal care and perform deliveries. Most midwives and VHWs have little or no education (as is the case with the vast majority of the rural population) and they are trained for 15 days by nurses at the health centers and district hospitals. These individuals are not paid in cash or in kind for their time but they enjoy prestige and, in some villages, may be helped by other villagers with their agricultural activities,

such as land clearing and/or harvesting. By the end of 1988, 1,560 VHWs and 1,200 midwives had been trained (see Table 4). The 15-day introductory course is supplemented by an annual 5-day refresher course.

2.11 The USB is open two hours each morning, but closed in the afternoon to allow the staff time to work in the fields or perform some other occupation to earn a living. If more than one villager is trained for each category of staff (VHW or midwife), these individuals rotate shifts. However, when the USB is closed, the VHWs and midwives are regularly on call. Complicated cases are referred to health centers and district hospitals. However, USBs often may be quite far from these referral centers and some of the most severe cases may require ambulance services, which are scarce. Nurses from the health centers and district hospitals sometimes provide intermittent support to the villages to assist with immunization programs and some provide maternal and child care services.

2.12 Approximately 220,000 people or roughly 20-25 percent of the population live in villages with USBs (see Table 5). However, the proportion of population covered varies among regions: For example, no USB has been established in the Biombo region, while at least 56 percent of the population in the Gabu region are serviced by village health posts.

2.13 Qualified health personnel in the rest of the system are scarce. Current staff ratios are below the norms except for medical doctors in the tertiary care system (national and regional hospitals) and auxiliary nurses at the health centers: In the district hospitals, there are 1.3 physicians on

average per facility, against a norm of 2.7, and only 1.3 registered nurses on average, opposed to a norm of 5.3. In the health centers, there are just 0.5 registered nurses on average, compared to a norm of 1.1. This means that one out of every two health centers is without a qualified nurse.

2.14 Regional imbalances exacerbate the ratios further: In 1987, there was one physician per 7,440 inhabitants nationally, a doctor/population ratio that exceeds WHO recommendations. In Bissau, the capital, the ratio was one per 2,450 while in the rest of the country the ration was one per 13430. The most disadvantaged regions were Biombo (one physician per 66,900), Oio (one per 53,430) and Tombali (one per 33,450).

Health finance

2.15 Domestic funding for health care is very limited and is declining in both absolute and relative terms. The Ministry of Public Health (MINSAP) has become increasingly dependent on foreign assistance, a situation that does not promote stability and sustainability of drug supplies and essential programs: available data suggest that in 1982, one third of the total public expenditure for health (US$7 million) was from outside sources (2). By 1988, however, foreign assistance (amounting to US$13.4 million) was covering 97 percent of the capital budget and at least 76 percent of the recurrent budget (see Table 6) External support for primary health care, including the USBs, is provided by UNICEF,bilateral donors and several NGOs.

2.16 A recent report estimated actual cost recovery of total health

expenditures in 1988 at US$9,448, or 0.5 percent of MINSAP recurrent expenditure (3). The largest share of these receipts (38 percent, or $3,623) were generated through prepayment collections at the USBs. The remainder was generated through user fees at health centers (32 percent) and hospitals (30 percent). Revenue from user fees is not retained at the collection point, but is forwarded up through the system into an account at the Ministry of Public Health, to finance the recurrent costs of the USB program. [1]

2.17 When viewed against total expenditures, cost recovery seems insignificant. There are several reasons. First, fees in the health care system have become almost negligible in real terms. For example, the current fee for a consultation is P.G.100 at national and regional hospitals, P.G. 50 at district hospitals and P.G. 30-50 at health centers. These fee levels were set in 1978 and have not been adjusted, despite annual inflation of about 100 percent from 1986-88 alone.[2] To put these figures in perspective, in July 1989, the price of a chicken in the rural locations visited by the survey team ranged from P.G. 4,000-6,000 and one kilo of rice cost about P.G. 1,000. Second, few patients pay fees, because at least 50-60 percent of all visits are exempt for paying: for example, government employees, children under 15 and pregnant women are exempt. Further, referral visits to higher level facilities are free.

2.18 A proposal to increase fees by 600-1,000 percent was made in 1988,

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[1] This has been the case for the past two years; prior to that time, user fee revenue was sent to an account in the Treasury (Dr. Erling Larsson, personal communication).

[2] At 1989 exchange rates, these fees are the equivalent of US$0.05, $0.025 and $0.015-0.025.

but was never approved by the General Assembly. In addition, the exemptions listed above would have continued. These exemptions should be limited to the most destitute; groups able to pay (such as government workers) should not be exempt.

2.19 In principle, drugs are free for patients admitted to hospitals, to hospital-based ambulatory care and to health centers. However, because drugs and dressings are reported to be scarce in the health care centers, patients must often buy their medications and supplies at local pharmacies where prices range from 2 to 15 times those of competitive international rates (see Table 7). Since MINSAP spend only 7.1 percent of its total budget on drugs, scarcities are not surprising (see Table 8).

2.20 MINSAP obtains most of its drugs as donations from donor organizations. Drug purchases by MINSAP occur mainly through the parastatal organization, Farmedi, which is also responsible for dispensing drugs to the Ministries of Rural Development and Fisheries. Farmedi operates a chain of about 10 pharmacies, three of which are located in Bissau (4). Farmedi drug prices are high; they include import duties, taxes, interest payments and a 20 percent profit margin. The few private pharmacies that exist are scattered.

Resource Mobilization through the USBs

2.21 The USB system is based on community participation and involves considerable local resource mobilization. A contract between the village leaders and the Ministry of Public Health defines responsibilities as the following:

1. The village provides the labor and most construction materials for building the health post. MINSAP provides materials for windows, doors, and hinges.

2. The government supplies simple equipment, including a metal cupboard for storing drugs, a bed, stretcher, four chairs, one obstetrical stethoscope, one lantern, a kit of posters and other teaching aids, and an initial stock of drugs estimated to last for six months (for the population of each village).

3. The village must collect funds under the prepayment system to ensure that the initial drug supply is continually replenished.

4. The village decides on the fee levels for the prepayment scheme, whether payment is based per capita, per adult or per household, and the timing of payments.

5. The village selects one or more of its residents to be trained as VHWs and midwives.

6. Some villages create special health subcommittees to oversee USB operations, but in the smaller villages, the responsibilities are performed by the political committee.

2.22 Funds are collected at USBs by the village committee treasurer or

one of the health staff and a record of the contributions is kept in each village. The funds are then transferred through the regional health directorate to Bissau, where they are deposited into a special account earmarked for recurrent costs for the USB program.

2.23 Drugs are sold to USBs with substantial subsidies, set at the central level and equal across regions. Drugs are bought by the government with foreign exchange; the rate of subsidy has increased sharply because drug prices to USBs have remained constant, despite rapid depreciation of the local currency (by over 400 percent between May 1987 and the end of 1988, and then continued in 1989). For example, at 1987 exchange rates, the subsidy on US drugs was 60 percent; but by 1989, essential drugs at the USBs were subsidized by at least 90 percent because of the depreciation of the peso against the dollar.[3] In 1989, the USBs were charged a cost for the different drugs that ranged from 1-33 percent of current competitive international prices (see Table 9).

[3] The average exchange rate in 1988 was P.G. 1,120/$1; in July 1989 it has risen to P.G. 1,970/$1.

Chapter III

The Survey of Village Health Posts

Objectives and Methodology

3.01 The objective of the 3-week field survey in June-July, 1989, was to gather information on the prepayment schemes and their potential for mobilizing more resources for the health sector. The survey attempted to explore the following:

1. Physical conditions of USBs, staffing patterns and availability of drugs;
2. Community perceptions about health status;
3. Frequency of visits to USBs, trends in utilization and in quality of services;
4. Extent of participation in each village studied, use of co-payments, and trends in prepayment rates;
5. Actuarial soundness of the system; and
6. Level of subsidization and cost recovery.

3.02 Two questionnaires were designed in Guinea-Bissau, approved by MINSAP's USB coordinator and field tested during the first round of interviewing in the Oio province. One questionnaire was used to interview groups of village inhabitants. It solicited data on village characteristics, preferences for health care, decision-making mechanisms, the structure and frequency of prepayment of fees and community willingness to pay. A second questionnaire was

administered to VHWs and midwives to gather information about these health workers, as well as on the physical structure of the USB and on the stock of drugs. In addition, a number of individual interviews were conducted with village residents to obtain demographic data, and information about the drugs used and preventive health measures taken.[4]

3.03 In order to survey as diverse a population as possible, the administrative regions of Oio, Tombali and Gabu--located in different parts of the country--were selected, as they represent various ethnic groups, religions and cultivation practices. These three regions contain 295 USBs, or 66 percent of the total (see Table 10).

3.04 On average, 35 percent of the population in these regions live in villages with USBs, although inter-regional variations are substantial: For example, in Tombali and Gabu, at least 42 and 56 percent, respectively, have access to USBs. In Oio only 14% of the population is covered. In all three regions, villages with USBs are larger on average than the typical Guinea-Bissau village, this is particularly noteworthy in the region of Gabu, where the average village had 185 inhabitants but the average village with a USB was three times as large (555).

3.05 It was decided that the sample would include villages that were reasonably accessible and which contained USBs established before. Most

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[4] A detailed questionnaire for household interviews had originally been prepared to obtain information on households' ability and willingness to pay, frequency and number of visits to the USB. Given the limited time, however, this questionnaire was not used.

important, the villages were chosen out of the population of USBs where the prepayment scheme had been operating for at least six months. Based on these criteria, 18 villages were sampled: six were selected at random from each of the three regions. Two of those initially chosen were replaced because they were too remote to visit in a reasonable amount of time. Only villages with USBs were visited; the characteristics of villages without health posts are not known. The villages sampled in Oio represented 14.6 percent of the region's population; in Tombali, the figure was 5.9 percent and in Gabu, 4.9 percent (see Table 11). The 18 USBs sampled represent 6.8 percent of all USBs established in the three regions before 1988. In two of the three, the villages visited were larger than the average village with a USB: in Oio, three large villages had 1,200-1,600 inhabitants.

3.06 There were an average of 540 permanent residents in the 18 villages surveyed (see Table 12), although during the wet season some experience a temporary influx of agricultural workers to harvest crops. The survey captured a wide ethnic diversity, reasonably representative of rural villages across regions. The two large muslim ethnic groups, the Fula and Mandinga, accounted for 44 percent of the population in the villages sampled, but only 35 percent of Guinea-Bissau's total population, based on the most recent census (1979). The remaining groups are predominantly animist. Ten of the villages were ethnically homogeneous.

3.07 Once the study team arrived in the villages, they explained the purpose of the visit and the method by which villages were selected. They stressed that the village had not been chosen because of any particular

characteristic. A group of five villagers were selected which included at least two women (with the exception of two villages). At least one representative of the village political committee, and usually the president or treasurer was present during the group interview, although this individual was generally not questioned. Each respondent was asked to answer the questions, without assistance or coaching, and responses were recorded; later, an average was calculated for each group or village.

3.08 The group of 2-4 VHWs and midwives was interviewed by the medical doctor on the study team. After this, the physical condition of the USB structures was evaluated and the stock of drugs was recorded.

Prepayment Schemes

3.09 Organization and management. USB structures in the sample were an average of four years old, with a range in age of from two to ten years (see Table 13). Only 4 of the 18 buildings visited were in less than satisfactory condition. In general the buildings were clean and very well maintained. On average, each USB has a volunteer staff of three midwives and three VHWs, while the minimum found were two midwives and one VHW. Both categories average 1.1 per 100 inhabitants, although the range is wide--0.3-5.0 midwives per 100 inhabitants and 0.1-6.7 VHWs.

3.10 Prepayment terms. Rates and methods of prepayment vary substantially among villages, suggesting a high degree of autonomy at the village level in determining the payment structure (see Table 14). For example, in 1988, annual

fees per adult male varied from P.G. 20- 500, with a mean of P.G. 203.4. [5] The average annual collection per capita, in 1988, based on total population in each village, was P.G. 181, with a range of P.G.28-981. The collection effort in 1 of the 18 villages was extraordinarily high, P.G. 981 per capita P.G. 1,400, per capita when collections of agricultural produce are included. This village apparently served as a model and visitors were often taken there. [6] Adults usually contribute to the prepayment plan twice a year and are given receipts that serve as proof of membership and entitle them to free drugs and services at the time of each visit. The VHWs normally keep a record of visits and payments, but midwives also assist in this function. In 10 of the 18 villages, the prepayment rates are the same for men and women. In four, the rate is lower for women than men. In two, only men pay. In another two, the rate is fixed per household. In one, the rate is fixed per married adult, and single adults pay a lower rate. Prepayments are assessed on children in only two villages. Only one village charged a copayment for each visit to the USB, which was P.G. 50 (or 25 percent of the annual rate for adult males and females).

3.12 Some villages made in-kind contributions of agricultural produce. In 1988, four contributed the value of a crop, produced through joint labor on a common field. In addition to supplementing the funds collected to buy drugs, these contributions have been used to finance other community needs, such as the construction of a tin roof for the USB building, or to provide assistance to the

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5 In mid-1988, P.G. 350 was equal to US$0.31, but had depreciated by July, 1989 to US$0.18).

6 Because this village was so atypical, some of the analyses for the survey were confined to the remaining 17 villages, where the collection effort is more the "norm."

poor and sick in the village.

3.13 Participation in the prepayment schemes is high above 90% on average. In half the villages surveyed, all households were participating. In the rest, the portion not participating was about 10 percent of the population, although in one village, 30 percent did not participate. Explanations for non-participation were not obtained. Those residents not participating are allowed to obtain drugs once or possibly twice, but are then required to join the scheme, unless they are destitute or sick. Residents from nearby villages that do not have USBs are normally permitted to obtain drugs in emergencies.

3.14 Community control of USBs is strong and prevents abuse of the system (i.e., hoarding drugs for future use or sale on the black market). The village political committee, through its president or treasurer, normally supervises USB operations, and village inhabitants are known to each other. Also, VHWs closely monitor the dispensing of drugs based on the illness diagnosed. This kind of control possibly explains why there is apparently no excessive demand for drugs. Hoarding of drugs was not mentioned during the interviews as a problem.

3.15 Prepayment levels in the USBs surveyed exceed the price of seeking care directly at health centers. The mean number of visits to health centers is 2.4 times a year. The consultation fee in health centers presently ranges between P.G. 35-50 per visit (an amount that considerably understates the complete treatment costs). Thus, someone visiting a health center would pay (in theory) a total of P.G. 120 a year. But since about half of those presenting themselves are exempt from payment, per capita charges fall to about P.G. 60 per

year. Nevertheless, the fees at the health centers have remained fixed since 1978, and have declined dramatically in real terms. Raising the fees and tightening exemptions would improve cost recovery at health centers and raise the incentives to use USBs.

3.16 The spread between prepayment levels and fees for service at referral centers (when they are nearby) reduces the incentive to join the prepayment schemes. It must be noted, however, that although those paying the consultation fee at the health centers are entitled to free drugs, these are rarely available and patients often pay high prices to obtain drugs at distant pharmacies.

Levels of Cost Recovery

3.17 The level of cost recovery per capita for 1988 in our sample of 18 villages was P.G. 181, or US$0.16; when the village with exceptionally high fees is excluded, the average was P.G. 134, or US$0.12. MINSAP has made independent estimates of drug consumption at the level of USBs by region (see Table 15). This estimate is based on recorded deliveries and is assessed at lowest international price: actual purchase data were not available. This comparison shows that the cost of drug consumption at the level of USBs in 1988 was US$0.14 in Oio and US$0.22 in both Gabu and Tombali. Our sample estimate for cost recovery of US$0.12 to 0.16 is at the lower end of the range found.

3.18 The total recurrent cost to the government of servicing a USB village of 400 inhabitants in 1988 (in 1988 prices) is estimated at P.G. 795 per capita. This amount reflects the full cost of drugs (P.G. 580 per capita) procured at

lowest international prices and the cost of supervision (see Table 16). The range of cost recovery was extreme, however: from 3 percent to 123 percent of estimated recurrent costs. Of course, not all villages consumed the quantity of drugs per capita that is assumed in this average (P.G. 580). Without knowledge of the value of drugs actually consumed by each USB, the actual cost recovery rates cannot be computed.

3.19 MINSAP pays no salaries to the village health agents who are selected by the village and donate their time. Thus, the prepayment levels in Table 14 understate the true level of contributions at USBs, since they exclude the value of health workers' time and the village contribution to constructing and maintaining the USB structure. In a few instances, villagers help the health workers plough or harvest their fields.

3.20 The survey of health posts did not attempt to gather data on the total resources mobilized through the prepayment scheme: The sample was too limited to permit a reliable estimate for the entire population enrolled in some 450 USBs operating across Guinea-Bissau. However, in 1988, mean collection per capita for our reduced sample of 17 USBs was P.G. 134. Given that 450 USBs have an average of 400 participants (the average population per village), total prepayment in 1988 would have reached the equivalent of US$12,240, an amount that is 3 times the reported cost recovery from USBs in 1988 of $3,623 (Chapter 2), and that would raise cost recovery from USBs alone to 0.7 percent of MINSAP recurrent health expenditure.

Drug availability and the quality of care

3.21 Health posts had an average of seven out of the 12 essential drugs in stock, with a minimum of three and a maximum of 11 (see Table 17). The resupply of drugs is driven by the level and frequency of contributions from the village and constrained by fluctuations in the availability of drugs at the central storage in the capital. On average, the most recent shipment was received two months before the survey occurred, but drug supplies were replenished every 8 months; in half of the villages, drugs were restocked only once per year. More than half had chloroquine, aspirin, tetracycline, eye ointment and oral rehydration salts (see Table 18), with the latter drug available in at least 80 percent of the USBs sample. The fact that two months after the last shipment the USBs had depleted stocks of almost half of the 12 essential drugs suggests that USBs suffer from drug shortages much of the time. A particular concern is that half of the health posts had already run out of chloroquine, the key drug for treatment of malaria.

3.22 During the three months prior to the survey, supervisors from the health centers made an average 4.1 visits per USB, although the number varies widely in the deferent regions (see Table 17). For example, while the USBs in Oio were more distant from a referral center (an average of 18 km., as opposed to 13 km. in the other two regions), they had more frequent supervision visits, more recent and frequent resupply of drugs, and more drugs in stock than USBs in the other two regions. Several of the USBs in Gabu had received no supervision visits and most USBs in Gabu and Tombali were resupplied only once a year. The data suggest that the more distant USBs receive proportionately more

supervision compared to those that are located closer to the referral centers.

3.23 Staff from the health centers help the VHWs give preventive health education, which was offered in 14 villages, or 78 percent of the sample. Topics included the importance of clean water, adequate latrines, balanced nutrition, vaccinations and protection against mosquitos. Training in early weaning was provided in ten of the villages.

3.24 The USBs were highly regarded. In all villages, respondents rated the overall performance of USBs as positive (see Table 19). Further, when asked if the overall quality of service had improved, remained constant or decreased over the last three years, all respondents stated the quality of service had improved. In two-thirds of the villages, respondents noted that more drugs had become available. In two villages, they reported the drugs were less available but that the proficiency or skills of the VHWs had improved. Other reasons included "more polite personnel," "more qualified personnel," "improvements to the physical structure of the USB," "good treatment," and "less waiting time." In general, waiting time at the USBs was less than a half hour per visit, usually 5-10 minutes.

Determinants of Utilization

3.25 Precise data for visits to USBs were difficult to obtain, but rough estimates can be calculated in the following manner. VHWs and midwives reported the number of patient visits for the seven days prior to the interviews. These numbers were transformed to visits per 100 inhabitants in each village (CONSA).

The five community respondents also reported the number of visits for each of their households during the month prior to the interview. From this data, a second estimate of the average number of visits per household in each village was obtained (CONSB). The means of the two variables for visits per month for 100 persons become 13 and 20 for CONSA and CONSB, respectively (see Table 20). The corresponding mean number of annual visits per capita becomes 1.6 and 2.41[7]. This is within the range of visits to USBs obtained through secondary data sources, which show a range of 0.73 to 4.61 annual visits to USBs per capita.

3.26 With regard to the trend in the number of visits to USBS and to alternate providers over the last three years, the respondents revealed that visits were increasing in five villages, decreasing in 11 and constant to declining in two. In 10 out of 18 villages, a traditional healer could be found in the immediate community or nearby. There was no obvious competition in service delivery between the USBs and traditional healers. Only in two villages did respondents state that the frequency of visits to the traditional healer had remained constant over the last three years.

3.28 The number of visits per capita is not significantly related to the level of prepayment rates or collection per capita. A priori, there are reasons to expect that villages with high rates would use the USB more: i.e., the higher the rate paid, the more drugs become available (since the USB can afford to purchase more) and one could anticipate a higher number of visits. But, there

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[7] Note that this annual average could only be estimated by assuming that the week and month prior to the survey were typical for the 12-month period. If consultations the month of the survey were higher or lower than the average month due to seasonality, then the estimate of annual visits would be biased upward or downward, respectively.

was no statistically significant difference between the villages.

3.29 Statistical analysis suggests that the frequency of visits to USBs is driven by the availability of drugs and the distance referral centers. [8] The number of visits to the USBs increases when drugs are available and decreases with the distance to the nearest referral center: that is the more distant is the referral center, the fewer are the visits to the USBs. This finding suggests that the USBs are important sources of referral for health centers and that the USBs and health centers do not compete for patients. Obtaining free care at referral centers normally requires a referral slip from the USB. However, the further the distance to the referral center, the higher is the private opportunity cost of seeking such care--due to the associated cost of travel or walking--and patients are less likely to report to a USB for referral slips. As the distance to the health center decreases, so too does the cost of passing through the USB to obtain free care at the health center. USBs distribute a limited number of simple drugs and have little capacity for diagnosis and treatment. The quality of service they provide is linked to the medical support, vaccination campaigns and advice they receive from personnel at the centers.

Evolution of Prepayment rates

3.31 Prepayment rates were raised between 1988 and 1989 in eight villages and lowered in only one. On the average, the annual rate for married men was

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8 The relationship between the actual number of drugs in stock and the number of visits was not statistically significant, but the relation between the number of visits trend in drug availability. However, the mean number of visits per household to USBs was so low as to suggest that drugs were not available a good deal of the time.

raised by 29 percent, and for married women by 66 percent. [9] These rate hikes confirm the importance villages attach to drug availability (see Table 21). These increases are worth noting because the official price of drugs has not changed since early 1988. This means the increase in payments is due to increased consumption of drugs. Rates were also raised in early 1989 to improve the quality of care at the USBs. In Gabu, women in three villages contributed half-kilogram of rice, valued at about P.G. 500 to enable them to attend annual refresher courses.

3.32 Respondents favored increasing prepayment contributions even further if this would assure the availability of drugs. They were asked, "are you willing to pay an additional P.G. 500 a year to obtain a more secure supply of drugs?" and in all the villages sampled, the answer was affirmative. In two villages, two women qualified the response, based on an assured food supply, since they had experienced hunger in 1987. Respondents were also asked if they would make an additional annual contribution to pay the midwives, but 10 of the 18 villages were opposed. A frequent explanation was that since members of the political committee were not paid, it would be unfair to reimburse the midwives or VHWs.

3.33 In the final analysis, respondents' ability and willingness to pay depended on the growth of their income; they emphasized the need for inputs and extension advice so as to increase agricultural production. Agricultural prices were improving, but supply response was constrained. In 10 of the 18 villages,

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[9] Increases are computed for the sample of 17 villages (excluding village #1).

the two major overall problems were related to agriculture (see Table 22): A recurrent theme across regions was the need for agricultural inputs (particularly insecticides). The labor constraint in preparing the land and plowing was a dominant theme in the villages visited in the Oio region, and it was felt that animal traction would help to overcome this problem. Farmers in the Tombali region referred to the salinization of their rice fields, which curtails yields.

3.34 The long distance to potable water is another constraint on available household labor resources that could be used in alternative pursuits. Respondents in at least 13 villages stated that distance to water was one of the three major problems faced: In one village, the distance to a water source was at least 8 kilometers in the dry season.

3.35 Bicycles at the USBs can facilitate communications with the health centers and are highly valued. Health workers in five villages visited in the course of this study said the lack of a bicycle was one of their three major concerns. In fact one village in Gabu (called Saucunda) had started a collection to buy one for this reason.

Chapter IV

Conclusions and Recommendations

4.01 In the introduction it was stated that prepayment schemes are often complicated to manage and reply on actuarial information that is not always available in developing countries. The prepayment scheme in the village health posts (USBs) in Guinea-Bissau is an example of a simple scheme that pools risks for basic primary health care services (particularly drugs), while simplifying management demands. Once prepayment levels have been determined by the village, the prepayments are collected all at once and forwarded up through the health system. This system is easier for illiterate villagers to manage than one of user fees for consultations and drugs. The latter would require an accounting of fee revenues for each use of various services by different categories of clients and finding a way of safeguarding the funds. The USB prepayment scheme is also much easier to manage than most insurance schemes, since there is no billing necessary, providers are not being reimbursed for services used and it is not necessary to assess prepayment rates based on risk. The services provided by USBs are highly subsidized, however, and limited to prenatal care and treatment of a few basic ailments with essential drugs.

4.02 Two additional pitfalls of prepayment schemes noted in the introduction were adverse selection (when only those with a high risk of illness join a prepayment scheme) and moral hazard (when those who join the scheme use more services than they would have in its absence). Both problems lead to rising treatment costs and premia, which in the extreme can reduce enrollments and drive the scheme out of business. In the village health posts in Guinea-Bissau,

adverse selection is prevented by almost universal membership within each village participating. Moral hazard is avoided through the vigilance of village health workers and midwives, who dispense drugs only as needed based on diagnosis, and by the pressure of the local community.

4.03 Although the level of cost recovery from the village health post prepayment scheme is low, this understates the total amount of resource mobilization. Villagers provide construction materials for the USB and the labor of village health workers and midwives for implementation and management of the scheme -- none of which is reflected in cost recovery figures. Further, respondents indicated their willingness to prepay greater amounts, provided that drugs could be made available on a timely basis. Drugs are heavily subsidized to the USBs, however, and their price has not been regularly increased to reflect inflation and devaluation. The degree of subsidization of USB drug supplies is thus increasing over time.

4.04 The survey found that the level of satisfaction with the village health posts was high, despite evidence that drug stocks are rapidly depleted. Respondents' willingness to prepay was often linked to improvements in the quality of service, including greater availability of drugs and better training for village midwives. Yet, the quality of service that can be provided at village health posts depends critically on the extent of support from the rest of the health care system. Even when villagers prepay, drugs are not available immediately because of more general problems of finance and procurement in the health system. The health posts also rely on supervision, training and referral services from health centers. If authorities wish to strengthen the USBs, they

must strengthen the health center support services and improve the drug resupply system. In addition, making bicycles available at each health post would improve the ability of workers to reach the more distant households, to communicate with the health center and to evacuate patients in an emergency. Bicycles might be offered through some sort of incentive or credit scheme.

4.05 In the context of village-managed health services in Guinea-Bissau, a flat-fee prepayment may be the only type of cost recovery feasible; a system of user fees for services or drugs might exceed the administrative and management capacities of the typical village. Would such a simple prepayment scheme work in the rest of the health system, in health centers and hospitals and in urban areas? It would probably be more difficult to administer such a scheme in urban areas or over large administrative tracts in rural areas, since the practice of almost universal participation (as occurs at the village level) that prevents adverse selection would be difficult to achieve. Overuse would also be difficult to prevent when the patient is not known by the health worker and there is no community pressure to conserve resources.

4.06 The capacity to administer user fee schemes already exists in health centers and hospitals in Guinea-Bissau, and this seems to have the greatest potential for resource mobilization at those levels in the short run. However, the very low level of user fees and the large number of exemptions at higher levels of the health system are limiting cost recovery and are discouraging use of USBs. Further, since user fee revenues are not retained at health centers, but sent upward to the Treasury, there is little incentive to enforce collections. To raise cost recovery for health centers and hospitals,

consultation fees should be raised and the number of exemptions tightened.

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TABLE 1

VITAL STATISTICS, GUINEA-BISSAU, 1988.

Total population	950,000
% of Population under 16 years	47
% of Population urbanized	28
Crude birth rate (per thousand)	46
Population growth rate (per year) (1970-80)	3.5%
Mortality rate (per thousand)	
Infants	180-200
1 - 4 years	270
Life expectancy at birth (years)	39
Illiteracy Rate	84%
Population per medical doctor (1987)	
Bissau (capital)	2,450
Rest of country	13,430

Source: **IECSE, August 1988.**

TABLE 2

HEALTH FACILITIES AND BEDS BY FACILITY CATEGORY.

	No. of units	No. of beds
National hospitals	2	633
Regional hospitals	4	299
Sector hospitals	12	279
Health centers	122	-
Village health posts	450	-

Source: MINSAP

TABLE 4

DISTRIBUTION OF UBBS AND VILLAGE HEALTH AGENTS BY REGION

REGION	UBBS	VILLAGE HEALTH WORKERS (VHWS)	MID-WIVES	VHWS /UBB	MIDW. /UBB
Tembeli	108	408	348	3.8	3.2
Cashew	56	249	140	4.4	2.5
Cabu	126	252	255	2.0	2.0
Oio	62	288	114	4.6	1.8
S.Bijagos	18	90	60	5.0	3.3
Bafata	54	162	170	3.0	3.3
Quinara	26	120	97	4.6	3.7
TOTAL	449	1884	1197		
MEAN	64	223	171	3.9	2.9

SOURCE: MINSAP

TABLE 5

COVERAGE OF USBS BY REGION

Region	Population a/ Participating	Total Population	Coverage %
Tombali	29,334	70,000	42
Cacheu	37,2000	145,000	26
Gabu	69,400	125,000	56
Oio	20,615	145,000	14
Bolama	12,528	30,000	42
Bafata	42,288	145,000	29
Quinara	7,793	40,000	19
Biombo	0	65,000	0
Bissau	0	165,000	0
Total	219,158	930,000	24

Source: MINSAP/WHO

a/ Assuming 100 percent participation of the population in village with USBs; this survey of 18 USBs in 3 regions found that 90 percent or more of the village population actually participate in the USB prepayment scheme.

TABLE 6

PUBLIC HEALTH EXPENDITURE, BY SOURCE AND BUDGET TYPE 1988 (US$ '000, CURRENT PRICES)

	MINISTRY OF PUBLIC HEALTH	%	FOREIGN AID	%	TOTAL	% FOREIGN AID
Recurrent Expenditures	1732	88.4	5880	41.7	7822.6	76.8
Capital Expenditures	227	11.6	7821	58.8	[illegible]	97.2
Total	1959	100	18411	100	15870.4	

SOURCE: Tibouti (1988)

TABLE 7

DRUG PRICES
UNIT PRICES, GUINEA BISSAU - JULY 1988

Code	Drug	Equiv. strength-s)	Pharmacy Farmadi-Cabuce)	Pharmacy 20 Jan. Bissauense)	Price to UMDe	Cost to central Pharm.ceee)	Lowest Intern price *)	Guided price to Health Centres **)
1	T Ampicillins	250 mg	100	400	-	117	138	35
1	Inj.Penicillin G	1 mill IU	-	1500	-	486	197	198
2	T Aspirins	300 mg	20	30	0.3	-	3	2
2	T Paracetamol	500 mg	-	-	-	-	-	5
3	T.Metronidazole	250 mg	30	50	-	-	14	10
3	T.Chloroquine	250 mg	40	80	2.4	-	15	15
1	Chloroquine syrup	1 liter	-	-	980	-	4368	2871
4	T.Chloramphenicole	250 mg	35	80	-	-	27	-
5	T.Chlorpromazine	100 mg	-	200	-	-	-	36
1	T.Multivitamine	-	-	250	0.5	-	16	2
1	Tetracycline eye ointm.1%	5g	-	-	80	-	501	228
1	Bacitracin/Neomyc dermic	5g	-	-	80	-	-	430
5	T.Ferric sulphate+folic.acid		-	-	0.2	-	4	2
1	T.Erythromycin	250 mg	-	-	-	177	85	

Nomenclature
T = tablettes
Inj. = Injectable
- denotes information not available at the time of the mission.

Code for type of drug:
1 = Antibiotics and other antimicrobial drugs
2 = antipyretic analgesics
3 = Antiprotozoal drugs
4 = Neuroleptic and antipsychotic drugs
5 = Roborants
s) Tablets in different strengths are converted to this tablet strength (to enable comparison)
ss) Sold by one unit, i.e. 1 tablet.
sss) Private pharmacy. Sold in packets of 10 units, i.e. 10 tablets.
ssss) Based on actual purchase 8.8.87, July 1988 exchange rate.
*) Lowest international or UNIPAC prices, 1988, USD 1 = GP 1970, reflects replacement costs. Typically in packets of 500 or 1000 tablets.
**) Not an actual price, but provided as information to health centers on on the invoice, in order to inform about the real cost of the drug.

TABLE 8

MINISTRY OF PUBLIC HEALTH EXPENDITURE ALLOCATION INCLUDING FOREIGN AID IN 1998 (BY EXPENDITURE TYPE) (US$ CURRENT PRICES)

	MINISTRY OF PUBLIC HEALTH BUDGET	%	FOREIGN AID	%	TOTAL	%
ersonnel	839236	42.8	838077	6.2	1677313	10.9
Medicine	131345	6.7	960000	7.2	1091345	7.1
Food Supplies	283263	14.5	3325767	24.8	3609030	23.5
hipping	286514	14.6	0	0	286514	1.9
Fuel/Power	194851	9.9	0	0	194851	1.3
Workshops, Supplies, Outreach Activities	134061	6.8	83844	0.6	217905	1.4
Maintenance Equipment	4309	0.2	94095	0.7	98404	0.6
ther Expenses	11811	0.6	288490	2.2	300301	2
Construction	0	0	3819431	28.5	3819431	24.9
Building Repairs	38560	2.1	590377	4.3	628937	4
Equipment	14039	0.7	1715459	12.8	1729498	11.3
Seminars & Scholarships	0	0	1245190	9.3	1245190	8.1
Studies	21222	1.1	450440	3.4	471662	3
Total	1959211	100	13411170	100	15370381	100

SOURCE: MINSAP (Tibouti) 1989

TABLE 9

SUBSIDIES AND COSTS FOR DRUGS PER 100 PERSONS, BASED ON AN ESTIMATED CONSUMPTION FOR 6 MONTHS
(equal to what each USB receives for the first 6 months)

Drug	------Cost to USBs---- # Units (1)	Unit price (2) P.Q.	Total cost (3) P.Q.	----Replacement----- cost 1989 *) Unit cost (4) U.S.D.	Total cost (5) P.Q.	Cost to USB /replacement cost (3)/(5) (6) %
Cloroquine syrup 60 ml (50mg/5ml)	5	45	225	2.23	21966	1%
Cloroquine 100mg, 1000 T	1	1600	1600	5.20	10244	16%
Aspirine adults, 1000 T	1	300	300	1.50	2965	10%
Sulphonamide 500mg 1000 T	0.5	1200	600	-		
Multivitamine, 1000 T	1	500	500	1.59	3132	16%
Ferric sulphate, 1000 T	1	200	200	2.10	4137	5%
Rehydrating salts	50	15	750	-		
Antibiotic skin ointment	3	50	150	-		
Eye ointment	10	30	300	0.30	5910	5%
Iodine solution 1% 1 l	0.1	360	36	0.55	108	33%
Potassium permanganate, 20 T	1	20	20	-		
Merchurochrome 2% solution, 100ml	1	1	na	-		
Benzyl benzoate pure, 1 l	1	250	250	-		
Cotton 450-500 gr.	1	230	230	2.17	4275	5%
Ligature 5cm-9cm	4	25	100	0.12	946	11%
Ligature 7.5-9m	5	30	150	0.15	1478	10%
Absorbent gauze bandage 20cm-6cm	2	50	100	-		
Sterile compress 7.6-6cm	20	4	80	0.06	3270	2%
Surgical tape 7cm-4.5cm	1	200	200	1.25	2468	8%
SUM			5781		60688	10%

Notes
- = information not available.
* = procurement data from the Social Infrastructure & Relief Project

Source: MINSAP 1988

TABLE 10

BASIC DATA FOR SURVEYED REGIONS

REGION	POPULATION	VILLAGES	AVERAGE VILLAGE SIZE 1989	HOSPITALS	HEALTH CENTERS	USBS	POPULATION PARTICI-PATING IN USBS	AVERAGE VILLAGE SIZE	PROPORTION OF TOTAL COVERED BY USBS (%)
SIG	145,000	620	231	2	14	62	20,615	333	14.2
TOUBALI	70,000	308	227	3	24	108	29,334	272	41.9
SIKU	125,000	676	185	2	14	125	69,400	555	55.5
TOTAL	340,000	1,612	211	7	52	295	119,349	405	35.1

SOURCE: MINSAP AND MISSION

TABLE 11

SAMPLE OF USBs BY REGION

REGION	USBs CREATED PRIOR TO 1988	SAMPLED USBs	----SAMPLE------ COVERAGE (%)	AVERAGE VILLAGE SIZE 1)
OIO	41	6	14.6	918
TOMBALI	101	6	5.9	811
QABU	122	6	4.9	897
TOTAL	264	18	6.8	540

SOURCE: 1989 SURVEY

NOTES
1) NUMBER OF PERSONS.

TABLE 12

POPULATION AND ETHNICITY OF SURVEY VILLAGES

REGION	VILLAGE	NO.	POPULATION	PERCENT MUSLIM	NO OF ETHNIC GROUPS
OIO	TCHALANA	1	203	84	3
OIO	QA-NAMUDA	2	1405	20	5
OIO	CUTHIA	3	1000	97	6
OIO	MANDINGAN	4	1250	0	2
OIO	MAQUE	5	900	99	2
OIO	SAREDONHA	6	100	100	1
TOMBALI	CAICOCA	7	420	12	5
TOMBALI	NHACUBA	8	350	0	1
TOMBALI	TCHINTEDI	9	200	0	1
TOMBALI	CLATCHE	10	80	0	2
TOMBALI	QUIBIL	11	300	0	1
TOMBALI	CUCUMBA	12	400	0	1
QABU	SAMBA TAC	13	500	100	1
QABU	MEDINA M	14	600	100	1
QABU	BILONCA	15	300	100	1
QABU	COINA	16	100	100	1
QABU	LEMQUENTE	17	331	98	3
QABU	SAUCUNDA	18	575	100	1
MEAN			540	80	2

SOURCE: 1989 SURVEY

TABLE 13

CHARACTERISTICS OF USBS

REGION	VILLAGE	NO.	POPULATION	YEARS SINCE CONSTRUC-TION	PHYSICAL CONDITION **)	MIDWIVES	VILLAGE HEALTH WORKERS	TOTAL HEALTH AGENTS (MIDWIVES AND VHW)	MIDWIVES/ 100 INHAB-ITANTS	VHWs/ 100 INHAB-ITANTS	TOTAL HEALTH AGENTS/ 100 INHAB TANTS
OIO	TCHALANA	1	203	2	2	1	3	4	0.5	1.5	2
OIO	QA-NAMUDA	2	1465	6	1	6	3	9	0.4	0.2	0.6
OIO	CUTHIA	3	1600	3	1	4	5	9	0.3	0.3	0.6
OIO	MANDINGAN	4	1250	6	1	4	1	5	0.3	0.1	0.4
OIO	MAQUE	5	800	2	2	3	3	6	0.4	0.4	0.8
OIO	SAREDONHA	6	160	3	2	4	3	7	2.5	1.9	4.4
TOMBALI	CAICOCA	7	428	3	1	5	4	9	1.2	0.9	2.1
TOMBALI	NHACUBA	8	350	3	1	2	3	5	0.6	0.8	1.4
TOMBALI	TCHINTEBI	9	200	6	1	3	2	5	1.5	1	2.5
TOMBALI	CLATCHE	10	60	5	0	3	4	7	5	6.7	11.7
TOMBALI	QUIBIL	11	360	9	1	3	4	7	0.8	1.1	1.9
TOMBALI	CUCUMBA	12	468	10	1	2	2	4	0.4	0.4	0.9
QABU	SAMBA TAC	13	386	2	0.5	5	4	9	1.3	1	2.3
QABU	MEDINA M	14	590	2	1	5	3	8	0.8	0.5	1.4
QABU	BILONCA	15	399	2	1	2	2	4	0.5	0.5	1
QABU	COINA	16	100	3	2	2	1	3	2	1	3
QABU	LENQUENTE	17	331	5	0.5	2	3	5	0.6	0.9	1.5
QABU	SAUCUNDA	18	575	7	0.5	5	5	10	0.9	0.9	1.7
			540	4	1	3	3	6	1.1	1.1	2.2

SOURCE: USB 1989 SURVEY

NOTES

** = INDEX FOR STANDARD OF BUILDING: THE VALUES OF "0", "1" AND 2 SIGNIFY UNSATISFACTORY, SATISFACTORY AND GOOD CONDITION, RESPECTIVELY

TABLE 14 PRE-PAYMENT SYSTEM 1988

ZONE	VILLAGE	POPULATION	LEVEL OF ASSESSMENT: FAMILY/ HOUSEHOLD	CHILDREN	MARRIED ADULT	SINGLE ADULT	ADULT MALE	ADULT FEMALE	FREQUENCY OF PAYMENT /YR	EXEMPTIONS: FAM NOT PAY	EXEMPTIONS: PERS NOT PAY	TOTAL PAYMENT	COLLECT/ /CAPITA	AG/CROP CONTRIBUT	TOTAL COLLECT/ /CAPITA	Copayment / CONSULTATION
BIO	TCHALANA	1	203		500	300			4	4		199860	981	84000	1394	0
BIO	GA-MAMUDA	2	1465				150	100	1		146	82469	56		56	0
BIO	CUINTA	3	1600	500					2	8		196206	66		66	0
BIO	MAMBINCAN	4	1750		200		500	500	1		125	393750	315	168000	483	0
BIO	MAQUE	5	800				100	50	1			66000	83	360000	533	0
BIO	SANEBONNA	6	160				100	50	2			26400	165	21000	296	0
TOMBALI	CAICOCA	7	428				100	100	2			90160	220		220	50
TOMBALI	MIACUBA	8	350				70	70	2	15		25350	72		72	0
TOMBALI	TCHINTEBI	9	200				500	400	1			89500	200		200	0
TOMBALI	CLAICHE	10	60				200	200	1			6600	110		110	0
TOMBALI	QUIBIL	11	360				250	250	1	5		90200	251		251	0
TOMBALI	CUCUMBA	12	468				250	250	1			64350	138		138	0
CAMU	SAMBA TAC	13	386	300					2			22269	58		58	0
CAMU	MEDINA N	14	590		50		50	50	1	10		23300	40		40	0
CAMU	BILONCA	15	399				100		1			10973	28	0	28	0
CAMU	COINA	16	100				500	500	1			27500	275		275	0
CAMU	LEMBUETEN	17	331				150		1	1	30	9850	28	0	28	0
CAMU	SAMCUMBA	18	575				20	20	12			79900	132		132	0
MEAN			540						2			76992	188		284	3

SOURCE: 1989 SURVEY

TABLE 15

DRUG CONSUMPTION
By region in USD *)

	Health centers	Total per capita	USBs	Per participant	Total region	per capita
Bafata			5081	0.12		
Bolama/Bijagos			2513	0.20		
Cacheu			4518	0.12		
Gabu	13708	0.11	9742	0.14	41801	0.33
Oio			4599	0.22		
Tombali	19449	0.28	6406	0.22		
Quinara			654	0.08		
Guinea-Bissau (= total)	151154	0.16	33492	0.15	531706	0.57

*) Based on actual volume 1988 and UNIPAC prices + 30% to cover distribution costs

Source: MINSAP/WHO

TABLE 16

LEVEL OF SUBSIDIZATION AT THE USBS
1988
P.G. IN 1988 PRICES

REGION	VILLAGE	NO.	POPULATION	COLLECT/ CAPITA/ YEAR	COLLECT/ CAPITA/ COST OF DRUGS & ADM./ CAPITA (%) 1/
OIO	TCHALANA	1	203	981	128
OIO	GA-MAMUDA	2	1485	56	7
OIO	CUTHIA	3	1800	66	8
OIO	MANDINGAN	4	1250	315	40
OIO	MAQUE	5	800	83	10
OIO	SAREDONHA	6	180	165	21
TOMBALI	CAICOCA	7	428	220	28
TOMBALI	NHACUBA	8	350	72	9
TOMBALI	TCHINTEBI	9	200	248	31
TOMBALI	CLATCHE	10	80	110	14
TOMBALI	QUIBIL	11	360	251	32
TOMBALI	CUCUMBA	12	468	128	17
GABU	SAMBA TAC	13	388	58	7
GABU	MEDINA M	14	590	40	5
GABU	BILONCA	15	388	28	3
GABU	CODNA	16	100	275	35
GABU	LENQUENTE	17	331	28	4
GABU	SAUCUNDA	18	575	132	17
MEAN			540	181	23
MEAN	EXCL VILLAGE NO 1		580	134	17

SOURCE: 1988 SURVEY

NOTES

1. AVERAGE RECURRENT COST PER CAPITA OF P.G. 79% INCLUDES P.G.

TABLE 17

SUPERVISION VISITS AND DRUG SUPPLY

REGION	VILLAGE	NO.	POPULATION	SUPERVISION VISITS LST 3MTHS	DRUG SUPPLY: LAST SHIPMENT MONTHS	DRUG SUPPLY: FREQUENCY MONTHS	DRUG SUPPLY: STOCK OF DRUGS 1/	DISTANCE TO REFERRAL CENTER (KM)
OIO	TCHALANA	1	208	9	1	6	9	20
OIO	GA-NAMUDA	2	1465	9	1	6	7	32
OIO	CUTHIA	3	1600	6	2	1	7	15
OIO	MANDINGAN	4	1250	6	1	6	11	22
OIO	MAQUE	5	900	9	1	3	9	11
OIO	SAREDONHA	6	160	3	2	3	11	6
TOMBALI	CAICOCA	7	428	6	2	6	5	7
TOMBALI	NHACUBA	8	350	5	4	6	3	6
TOMBALI	TCHINTEBI	9	200	6	4	12	1	25
TOMBALI	CLATCHE	10	60	6	3	12	5	30
TOMBALI	QUIBIL	11	360	0	5	12	7	3
TOMBALI	CUCUMBA	12	468	3	2	12	7	6
GABU	SAMBA TAC	13	386	2	2	12	11	13
GABU	MEDINA M	14	590	2	2	6	7	18
GABU	BILONCA	15	399	0	2	12	7	14
GABU	COINA	16	100	3	2	12	5	10
GABU	LENQUENTE	17	331	3		12		16
GABU	SAUCUNDA	18	575	0	3	12	6	7
MEAN			540	4	2	8	7	15

SOURCE: 1989 SURVEY

NOTES

1) NUMBER OF DRUGS STOCKED AT TIME OF VISIT.

TABLE 18

AVAILABILITY OF DRUGS IN SURVEYED USBs

Percent of health posts with nine drugs surveyed at the time of visit.

Chloroquine tablets and syrup	.56
Aspirins 300 mg	.83
Sulphonamide	.67
Multivitamins	.39
Ferric sulphate/folic acid	.61
Tetracycline eye ointment	.61
Antibiotic dermic ointment	.30
Benzyl benzoate (disinfectant)	.28
Oral rehydration salt	.83
Average	.56

Source: 1989 Survey

TABLE 19

PERCEPTIONS OF CHANGE IN QUALITY

VILLAGE	NO.	EVALUATION OF USB 1)	WAITING TIME LESS THAN 1/2 HOUR 2)	INCREASE/ DECREASE 3)	IMPROVEMENT IN QUALITY DUE TO: MORE DRUGS 4)	MORE POLITE PERSONNEL 4)	MORE QUALIFIED PERSONNEL 4)	OTHER IMPROVD CONSTRUCT 4)	GOOD TREATMENT/ /MORE CONFIDENCE 4)	LESS WAITING 4)	REFERRALS IMPROVED 4)
TCHALANA	1	1.0	1.0	1.0	1.0	0.8	0.2				
GA-MAMUDA	2	1.0	1.0	1.0	0.8	0.6	0.6	0.8			
CUTHIA	3	1.0	1.0	1.0	1.0	0.2					
MANDINGAN	4	1.0	1.0	1.0	1.0	1.0				1.0	
MAQUE	5	1.0	1.0	1.0	1.0	1.0	1.0	1.0			
SAREDONHA	6	1.0	1.0	1.0	1.0	1.0					
CAICOCA	7	1.0	1.0	1.0	1.0						0.2
NHACUBA	8	1.0	1.0	1.0	1.0						
TCHINTEBI	9	1.0	0.8	1.0	0.2		0.8				
CLATCHE	10	1.0	1.0	1.0	1.0						
QUIBIL	11	1.0	1.0	1.0	1.0	0.2					
CUCUMBA	12	1.0	1.0	1.0	0.8				0.2	0.2	
SAMBA TAC	13	1.0	1.0	1.0	1.0						
MEDINA M	14	1.0	1.0	1.0	1.0		0.8				
BILONCA	15	1.0	1.0	1.0	-1.0		0.6			0.4	
COINA	16	1.0	1.0	1.0	1.0		1.0		1.0		
LENQUENTE	17	1.0	1.0	1.0	-0.8		1.0				
SAUCUMBA	18	1.0	1.0	1.0	0.2		0.6			0.2	
MEAN:		1.0	1.0	1.0	0.7	0.1	0.7	0.9	0.6	0.5	0.2
NO OF OBSERVATIONS		18	18	18	18	7	9	2	2	4	1

NOTES

1) = INDEX DENOTES WITH "1" SATISFACTION AND WITH "0" NON SATISFACTION WITH USB.
2) = INDEX DENOTES WITH "1" OCCURRENCE OF THE EVENT, AND WITH "0" NON OCCURRENCE.
3) = INDEX DENOTES WITH "1" INCREASE AND WITH "-1" A DECREASE.
4) = INDEX DENOTES WITH "0" NO IMPROVEMENT IN QUALITY AND WITH "1" AN IMPROVEMENT; INDEX CAPTURES MEAN EVALUATION OF USUALLY FIVE INDIVIDUALS INTERVIEWED.

TABLE 20

VISITS TO USBS AND DISTANCE TO NEAREST OTHER PROVIDER

Region	Village	No.	Population	Distance to Nearest Provider (KM)	Visits/ Month 100 Persons (CONSA)1/	Visits/ Month 100 Persons (CONSB)2/	Main Age Bracket of Patients
OIO	Tchalana	1	203	20	6.3	5.6	1-5
OIO	Ca-Namuda	2	1465	32	11.7	8.9	0-1
OIO	Cuthia	3	1600	15	6.7	7.1	0-1
OIO	Mandingan	4	1250	22	1.7	7	16-45
OIO	Maque	5	800	11	8.6	25.3	1-5
OIO	Saradonha	6	160	6	34.0	42.1	1-5
Tombali	Caicoca	7	428	7	18	20.1	1-5
Tombali	Nhacua	8	350	6	11	25.3	1-5
Tombali	Tchintebi	9	200	25	0	9.9	1-5
Tombali	Clatche	10	60	30	0	23.5	1-5
Tombali	Quibil	11	360	3	6	19	1-5
Tombali	Cucumba	12	468	6	27.5	33.5	1-5
Gabu	Samba Tac	13	386	13	11.1	19.1	1-5
Gabu	Medina M	14	590	18	26.9	22.7	5-15
Gabu	Bilonca	15	399	14	7.5	9.9	N.A.
Gabu	Coina	16	100	10	25.7	27.7	5-15
Gabu	Lenquente	17	331	16	N.A.	4.9	1-5
Gabu	Saucunda	18	575	7	N.A.	44.[illegible]	1-5
Mean			540	15	13	20	

Source: 1989 Survey

Notes:

1. Derived from number of visits during the seven days prior to the survey; Data from the VHWs.

2. Derived from number of visits per household during the month prior to the survey; data from community representatives.

TABLE 21

COMPARISON PRE-PAYMENT RATES 1988-89

REGION	VILLAGE	NO.	POPULATION	1988 NORMALIZED ANNUAL PAY PER ADULT MARRIED MALE	1988 NORMALIZED ANNUAL PAY PER ADULT MARRIED FEMALE	1989 NORMALIZED ANNUAL PAY PER ADULT MARRIED MALE	1989 NORMALIZED ANNUAL PAY PER ADULT MARRIED FEMALE	INCREASE 1988-89 ADULT MALE	INCREASE 1988-89 ADULT FEMALE
OIO	TCHALANA	1	208	2000	2000	4000	4000	2000	2000
OIO	GA-NAMUDA	2	1465	150	100	200	200	50	100
OIO	CUTHIA	3	1600	500	500	1000	1000	500	500
OIO	MANDINGAN	4	1250	500	500	500	500	0	0
OIO	MAQUE	5	900	100	50	200	100	100	50
OIO	SAREDONHA	6	160	200	100	200	200	0	100
TOMBALI	CAICOCA	7	428	200	200	200	200	0	0
TOMBALI	NHACUBA	8	350	150	150	150	150	0	0
TOMBALI	TCHINTEBI	9	200	500	400	225	225	-275	-175
TOMBALI	CLATCHE	10	60	200	200	400	400	200	200
TOMBALI	QUIBIL	11	360	250	250	250	250	0	0
TOMBALI	CUCUMBA	12	468	250	250	300	300	50	50
GABU	SAMBA TAC	13	386	300	300	500	500	200	200
GABU	MEDINA M	14	590	50	50	50	50	0	0
GABU	BILONCA	15	399	100	0	500	500	400	500
GABU	COINA	16	100	500	500	500	1000	0	500
GABU	LENQUENTE	17	331	50	0	50	500	0	500
GABU	SAUCUNDA	18	575	240	240	240	240	0	0
MEAN (18)			540	347	322	526	573	179	251
MEAN (17)				249	228	321	371	72	148

SOURCE: 1989 SURVEY

NOTES

INCLUDES NEW FEE OF PG 500 OR .5KG OF RICE PER WOMAN TO PAY FOR TRAINING COURSES FOR MID-WIVES IN VILLAGES NO:S 15,16 & 17

TABLE 22

MAJOR PROBLEMS REPORTED

VILLAGE	NO.	AGR	NO SCHOOL	ROOF ZINC	WATER	ROAD	MOSQUITOS	HEALTH	USB: BICYCLE	USB: ZINC ROOF	NOTES
TCHALANA	1	2	3		1						AGRICULTURAL INPUTS, LABOR CONSTAINT IN PLOUGHING
GA-MAMUDA	2	1	3		1						AGRICULTURAL INPUTS, LABOR CONSTAINT IN PLOUGHING
CUTHIA	3	1			2						AGRICULTURAL INPUTS, LABOR CONSTAINT IN PLOUGHING
MANDINGAN	4	1				2					AGRICULTURAL, NEED INSECTICIDES, CREDIT
MAQUE	5				1				2	1	
SAREDOMA	6			2	3						
CAICOCA	7	3			1				2		WATER UP TO 8 KM AWAY IN DRY SEASON; NEED OF INSECTICIDES
MAACUBA	8	2			1						AGRICULTURE: SALINIZATION, NEED OF INSECTICIDES
TCHINTEDI	9	2	3						1		AGRICULTURE: SALINIZATION, NEED OF RICE THRESHER
CLATCHE	10	1			2						AGRICULTURE: SALINIZATION, SILTING
QUIBIL	11	1									AGRICULTURE: NEED OF RICE THRESHER, SILTING, CREDIT
CUCUMBA	12				1						
SAMBA TAC	13			3	1	2					
MEDINA M	14				1			2			
BILONCA	15				1				2	3	INSECT PLAGUE ON RICE, TSE-TSE FLIES, INSUFFICIENT
COIMA	16	2					1		3		MOSQUITOS; AGRICULTURE: WILD ANIMALS, INSECT PLAGUE
LEMQUENTE	17	1	2					3			NEED OF AGR INPUTS & EQUIPMENT, NEED OF DRUGS
SAUCUMBA	18				1	2		3			NEED OF DRUGS
MEAN: NO OF OBSERVATIONS		11	4	2	18	3	1	3	6	2	
RANK 1		6	0	0	10	0	1	0	1	1	
RANK 2		4	1	1	2	3	0	1	3	0	
RANK 3		1	3	1	1	0	0	3	1	1	

SOURCE: SURVEY 89

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